

**IN THE CLAIMS:**

1. (Withdrawn) A device for sensing a gas, the device comprising a plastics housing moulded in situ around at least one portion of a conducting lead frame, the housing defining an enclosure and being provided with means for enabling gas flow into the enclosure, and at least one gas sensitive element within the enclosure mounted to the conducting lead frame, wherein the conducting lead frame comprises connection leads which are accessible through, and are at least partially encapsulated by, the wall of the housing.

2. (Currently Amended) A device for sensing a gas, the device comprising at least one gas sensitive element contained within a flameproof, plastics housing supporting a flame arrestor which enables gas to flow into the interior of the housing, and the gas sensitive element being connected to conducting leads which are accessible through, and are at least partially encapsulated by, the wall of the housing so that there is intimate contact between the wall and the conducting leads, the encapsulating wall having sufficient thickness such that the housing will not allow the propagation of an ignition source from within the device to the ambient atmosphere, under working conditions.

3. (Original) A device according to claim 2, wherein the plastics housing is fabricated by moulding in situ the plastics material directly around the conducting leads.

4. (Previously Presented) A device according to claim 2, wherein the flame arrestor is located above the gas sensitive element, the conducting leads being accessible through a side wall of the housing.

5. (Original) A device according to claim 4, wherein the conducting leads are coupled with respective contacts located in an integral extension of the housing.

6. (Previously Presented) A device according to claim 2, wherein the conducting leads are provided by a conducting lead frame fabricated prior to encapsulation by the plastics housing.

7. (Previously Presented) A device according to claim 2, wherein the flame arrestor is a metal mesh.

8. (Previously Presented) A device according to claim 2, wherein the flame arrestor is joined to the plastics housing by a process of thermal bonding around its perimeter.

9. (Previously Presented) A device according to claim 2, further comprising at least one filter in order to remove contaminants from the gas flow into the device.

10. (Original) A device according to claim 9, which further comprises means for retaining components located outboard of the flame arrestor.

11. (Original) A device according to claim 10, wherein the retaining means is provided by a bezel which fastens mechanically to the housing.

12. (Previously Presented) A device according to claim 9, wherein the filter, or at least one of the filters, removes hydrogen sulphide from the gas flow into the device.

13. (Previously Presented) A device according to claim 9, wherein at least one of the filter (s) is inboard of the flame arrestor.

14. (Previously Presented) A device according to claim 2, further comprising means for protecting one or more of the gas sensitive element from shock damage.

15. (Previously Presented) A device according to claim 2, further comprising means for insulating the gas sensitive element and electrical connections, either in terms of electrical insulation or heat insulation, or both.

16. (Previously Presented) A device according to claim 14, wherein the protecting means comprise at least one layer of shock absorbent and insulating material.

17. (Previously Presented) A device according to claim 16, wherein the shock absorbent is glass wool.

18. (Previously Presented) A device according to claim 2, further comprising a compensating element.

19. (Previously Presented) A device according to claim 18, wherein the compensating element comprises a catalytic bead.

20. (Previously Presented) A device according to claim 2, wherein the gas sensitive element is positioned at least partly within a respective recess in an interior wall of the housing.

21. (Previously Presented) A device according to claim 20, wherein the recess also contains means for the protection and insulation of the gas sensitive element positioned at least partly inside it.

22. (Previously Presented) A device according to claim 2, wherein the thickness of the portion of the housing wall through which the conducting leads extend is substantially at least 6 mm.

23. (Withdrawn) A device according to claim 1, which further comprises an electronic component mounted onto at least some of the portions of the conducting lead frame not covered by the plastics housing.

24. (Withdrawn) A device according to claim 23, wherein the electronic component is a memory component.

25. (Withdrawn) A device according to claim 24, wherein the electronic memory component is an EEPROM.

26. (Withdrawn) A device according to claim 24, wherein the electronic memory component stores data relating to the or each gas sensitive element.

27. (Previously Presented) A device according to claim 2, wherein the plastics housing comprises at least an inner portion and an outer portion, the outer portion being moulded around the inner portion.

28. (Withdrawn) A device according to claim 1, which further comprises a cap which covers at least some of the portions of the conducting lead frame not covered by the plastics housing.

29. (Withdrawn) A device according to claim 1, wherein the gas sensitive element is a semiconductor gas sensor.

30. (Withdrawn) A device according to claim 29, wherein the semiconductor gas sensor comprises a p-type mixed metal oxide semiconducting material of the first, second and/or third order transition metal series and wherein the semiconductor gas sensor is responsive to a change in concentration of carbon monoxide in the surrounding atmosphere and to a change in concentration of oxygen in the surrounding atmosphere.

31. (Withdrawn) A method of manufacturing a device for sensing a gas, the method comprising moulding a plastics housing in situ around at least one portion of a conducting lead frame such that the housing defines an enclosure, providing the housing with means for enabling gas flow into the enclosure, mounting at least one gas sensitive element inside the enclosure and connecting it to the conducting lead frame, and providing the conducting lead frame with connection leads which are accessible through, and at least partially encapsulated by, the wall of the housing.

32. (Withdrawn) A method according to claim 31, wherein the plastics housing is moulded around at least a portion of the conducting lead frame in two steps.

33. (Currently Amended) A method of manufacturing a device for sensing a gas, the method comprising moulding a plastics housing in situ directly around a set of conducting leads so that there is intimate contact between the wall and the conducting leads, mounting at least one gas sensitive element inside the housing and connecting it or them to the conducting leads which are accessible through, and at least partially encapsulated by, the wall of the housing, the

encapsulating wall having sufficient thickness that the housing will not allow the propagation of an ignition source from within the device to the ambient atmosphere, under working conditions, and securing a flame arrestor to the housing which completes the flameproof enclosure yet enables gas to flow into the interior.

34. (Original) A method according to claim 33, wherein the flame arrestor is joined to the plastics housing by a process of thermal bonding around its perimeter.

35. (Cancelled)